

Attachment C
IRA Work Plan:
Imerman Park

IRA Work Plan: Imerman Park

Prepared for
The Dow Chemical Company

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Midland, Michigan, 48667

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Contents

Section	Page
<u>Acronyms and Abbreviations</u>	iii
<u>IRA Work Plan: Imerman Park</u>	1
<u>1. Introduction</u>	1
<u>2. Site Location and Description</u>	1
<u>3. Physical Description</u>	2
<u>4. Recreational and Other Uses of Parks</u>	2
<u>5. Current Conditions in the Park</u>	3
<u>6. Description of Completed Interim Response Activities (Hand Wash Stations)</u> ..	3
<u>6.1 Servicing of Hand Washing Stations:</u>	3
<u>6.2 Wash Station Signage</u>	3
<u>7. Description of Planned Interim Measures</u>	3
<u>8. Schedule</u>	5
<u>9. References</u>	5

Tables

1	<u>Summary of Park Features</u>	1
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Figures (at end of document)

1	Site Location
2	Aerial Photo Showing Sampling Locations

Acronyms and Abbreviations

Dow	The Dow Chemical Company
IRA	Interim Response Activity
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
MSU	Michigan State University
O&M	Operations and Maintenance
ppt	parts per trillion
RCRA	Resource Conservation and Recovery Act
RSGIS	Remote Sensing and Geographic Information Science
SOW	Statement of Work
TEQ	toxic equivalent
USDA	United States Department of Agriculture

IRA Work Plan: Imerman Park

1. Introduction

On June 12, 2003, The Dow Chemical Company's (Dow) Midland Plant was issued a Resource Conservation and Recovery Act (RCRA) Operating License (the "License") by the Michigan Department of Environmental Quality (MDEQ). The License governs Dow's hazardous waste management activities at the Midland Plant, and also contains requirements for RCRA Corrective Action both onsite and offsite. The offsite provisions contained in Sections XI.B. and XI.G. of the License are the basis for this work plan. This work plan describes the Interim Remedial Activities (IRAs) that will be implemented in Imerman Memorial Park.

Imerman Memorial Park is located on the Tittabawassee River in Saginaw County (Figure 1). The results of recent studies by MDEQ, *FINAL REPORT, Phase II Tittabawassee/Saginaw River, Dioxin Flood Plain Sampling Study, June 2003* was the basis of MDEQ's recommendation for the elimination of potential exposure in public areas in the floodplain such as may exist at parks and boat launches. As a result of these preliminary data, Dow has worked in consultation with park officials to develop this work plan to address potential exposure of park visitors to soils and sediment.

2. Site Location and Description

Imerman Memorial Park is located in Saginaw County (Figure 1). Table 1 below summarizes some of the key features including the size, facilities present, frequency of park use, potential for seasonal flooding, and several other characteristics. The following sections further describe the park.

TABLE 1
Summary of Park Features
The Dow Chemical Company

Park Name	Size (acres)	Playgrounds	Ball fields	Other Ball Courts	Boat Launches	Fishing dock	Hiking Trails	Wooded areas	Restroom facilities	Portable Toilet
Imerman Memorial	96	Y	Y	Y	Y	Y	Y	Y	Y	N

3. Physical Description

This section includes a physical description of the park and other features. Figure 2, associated with the description, include a recent aerial photo with overlays that identify park features such as playgrounds, ball fields, facilities, roads, boat launch areas, etc.

Imerman Memorial Park encompasses 96 acres at 3495 Midland Road in Saginaw, Michigan. It is operated by the Saginaw County Parks and Recreation Department. According to the Saginaw County Parks and Recreation Commission literature, Imerman Memorial Park was originally part of a land grant given by President Jackson in 1835 to Andrew Ure. In 1955, the Saginaw Junior Chamber of Commerce (Jaycees) purchased a portion of Andrew Ure's farm to commemorate the life of Elliot Imerman, a prominent local citizen. In 1956, the Saginaw Jaycees deeded approximately 90 acres of property to Saginaw County for the development of Imerman Memorial Park. The Parks Commission began development of the park in 1970, the majority of which took place after 1973.

Park amenities include ball fields, open space, hiking trails, pet exercise area, tennis, volleyball and basketball courts, children's play areas, shuffleboard, horseshoe pits, picnic pavilions, canoe rentals, fishing dock, and boat launch (Figure 2). The park contains a large forest dominated by beech and maple trees. The "Flood Plain Forest Trail" passes through the forest and over several walkways to allow seasonal water flow to pass through the park.

Land elevation rises relatively quickly over this short distance (about 50 yards). The riverbank is steep and heavily vegetated, although a concrete boat launch and fishing dock allow visitors river access. Most of the park, including the nature trail, is located within the estimated 100-year floodplain. However, a small portion of the park, including the children's play area, is adjacent to highway M-47 and is outside of the floodplain. The United States Department of Agriculture (USDA) Soil Conservation Service (USDA 1994) has identified soils within the park as Sloan-Ceresco complex. These soils are located on nearly level areas of alluvial planes and are very poorly drained and frequently flooded.

An examination of historical aerial photos collected from Michigan State University (MSU) Remote Sensing and Geographic Information Science (RSGIS) did not identify significant construction activities or other soil disturbances from 1937 to 1980. In general, the property at Imerman Memorial Park was farmed and wooded in 1937 and, with the exception of the removal of small farming structures and the addition of roads, the land remains largely unchanged over time. The main agricultural fields have been converted to the grassy parkland that now contains parking, ball fields, and a dog play area. Currently, surrounding property is low-density residential. Homes occupy property directly across the street from Imerman Memorial Park. Adjacent property also contains private residences.

4. Recreational and Other Uses of Parks

This section describes the typical users of the park and the primary activities that occur.

A playground and ball fields are located in the park. The park is available for use year-round by hikers, birdwatchers, and dog owners. A large sandbox is also present near the play structures. In addition, the play structures are surrounded by sand and a small digging device (mock backhoe) is provided for children to dig in the sand.

5. Current Conditions in the Park

During the MDEQ study, soil samples were collected at 14 sample locations and are reported in MDEQ Phase II Report (MDEQ 2003). The dioxin and furan concentrations in parts per trillion (ppt) 2,3,7,8-TCDD toxic equivalent (TEQ) reported in the surface samples are shown on Figure 2.

6. Description of Completed Interim Response Activities (Hand Wash Stations)

Dow has already consulted with park management to evaluate the number and location for the installations and use of portable hand-washing stations in Imerman Park as a means of reducing the potential for exposure to contaminated soils and sediments. Dow has contracted, procured, and installed hand-washing stations at the locations suggested and approved by park officials.

6.1 Servicing of Hand Washing Stations:

Wash stations were contracted through Johnnie-On-The-Spot of Freeland and Saginaw. All hand-washing stations are being serviced by Johnnie-On-The-Spot once per week. The wash stations are filled with fresh water sourced from the City of Saginaw water supply and carted to the stations by Johnnie-On-The-Spot. Gray water is removed and discarded at the Saginaw County water treatment facility. Based on suggestions from park managers, the hand-washing stations were removed from the parks in November and will be reinstalled in April.

6.2 Wash Station Signage

The signs at each wash station explaining the use of the station will be developed as described in Section 7.

7. Description of Planned Interim Measures

Following discussion with Saginaw County officials responsible for Imerman Memorial Park, the following IRAs were identified for implementation in the park to reduce potential exposure to soil and sediment at the lower elevation areas of Imerman Park where elevated levels of dioxins and furans were detected:

- **Signage:** Signs advising the general public of the potential for exposure to dioxins and furans in soils and sediments will be posted within Freeland Festival Park. MDEQ, Michigan Department of Community Health (MDCH), and Tittabawassee Township will determine the content, design, and arrange for the installation of the proposed warning signs. Development and posting of signage will be completed in accordance with the work plan entitled: "Interim Response Activity: Communications."
- **Erosion Control:** The portion of the riverbank near the pavilion and floating dock will be stabilized to prevent further erosion of the bank near the base of the pavilion.
- **Cover:** Walking trails will continue to be covered with wood chips where there is bare soil, as needed. The area along the sides of the boat launch will be covered with stone to minimize contact with soil and sediments. Access to parking area, near the wash

station/rest rooms, will have stone placed over exposed soils. The actively used areas within the 100-year floodplain (e.g., play areas, bark park, pavilion) will be evaluated for the placement of a vegetative cover. Portions of these areas will require augmentation of the existing grassy cover to limit or eliminate the potential for direct contact with exposed soil. These areas will be evaluated in the springtime when there is no snow cover to determine specific locations where amendments will be necessary. Following this evaluation, a final design document will be prepared and submitted to MDEQ for review and approval incorporating one or more of the following actions:

- Interim Cover Materials – These actions will include the placement of topsoil and ground cover vegetation (such as grass) in specific locations identified following a site reconnaissance in the spring of 2004.
- Interim Actions Designed to Meet Criteria – Depending on the results of the spring site reconnaissance survey, Dow may elect to install cover materials that are designed to meet criteria (in accordance with Part 201 guidance). The cover would consist of the following conceptual design:

For areas with average use (e.g., picnic areas, shelters):

- A barrier layer (e.g., flagging) will be placed over the area to serve to alert individuals who may conduct intrusive activities in the park
- 6 inches of clean topsoil will be placed on top of the barrier layer
- Grass or sod will be placed on top of the topsoil

For areas with intensive use (e.g., playground areas and sports fields):

- A barrier layer (e.g., flagging) will be placed over the area to serve to alert individuals who may conduct intrusive activities in the park
- 24 or 30 inches of clean topsoil will be placed on top of the barrier layer
- Grass, sod, or other material (e.g., wood chips) appropriate for the use of the location will be put on top of the topsoil

In addition to determining the need for additional vegetative cover for play areas, a barrier layer will be installed. Thirty inches of clean sand will be placed on top of the barrier.

Any dredge materials from the river in the park will be properly transported and disposed at an approved offsite location.

An Operations and Maintenance (O&M) plan will be implemented to maintain these actions. The O&M plan will include regular inspections and maintenance activities required to maintain the barriers.

Details of the barrier installation, removal and disposal of dredge material, and the inspection and maintenance plan will be submitted as part of a final design package.

Park officials have agreed to have these items completed as soon as feasible. Dow will reimburse the township for the costs incurred as a result of implementing these IRAs.

A brief report summarizing these IRAs will be submitted to MDEQ once they are completed.

8. Schedule

The estimated schedule is presented in Attachment G of the Statement of Work (SOW) for the Tittabawassee River Sediment and Floodplain and includes the following activities:

- Site reconnaissance survey in the spring of 2004 to identify specific areas requiring vegetative cover materials
- Preparation and submittal of final design package
- MDEQ approval of final design
- Preparation and submittal of completion report
- O&M Plan

9. References

Michigan Department of Environmental Quality. 2003. Phase II Tittabawassee/Saginaw River Dioxin Flood Plain Sampling Study, June.

United States Department of Agriculture Soil Conservation Service. 1994. Soil Survey of Saginaw County, Michigan.

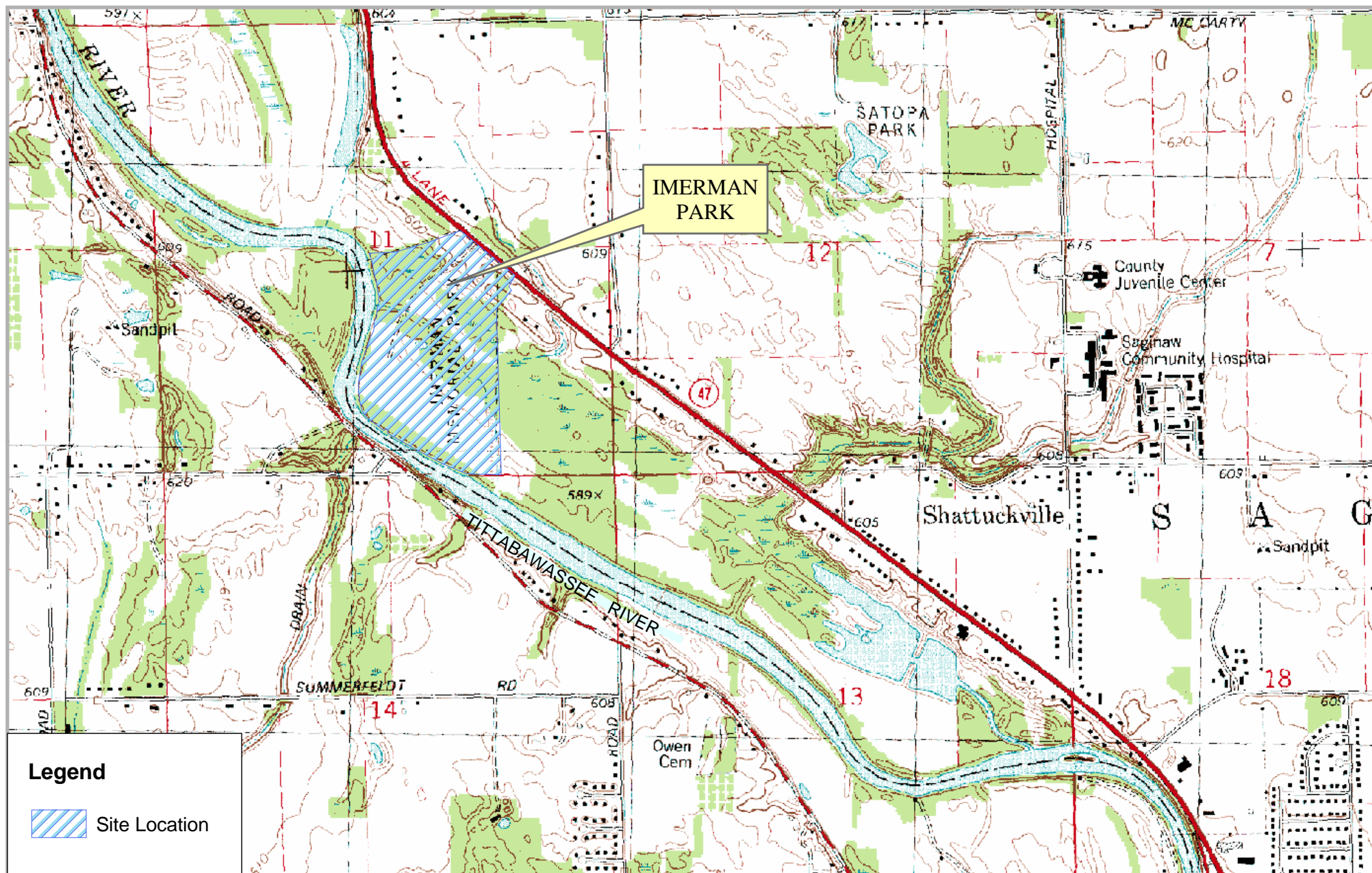


Figure 1
Location of Imerman Park
 Interim Response Activities Workplan: Imerman Park
 Dow Midland Offsite Corrective Action Program

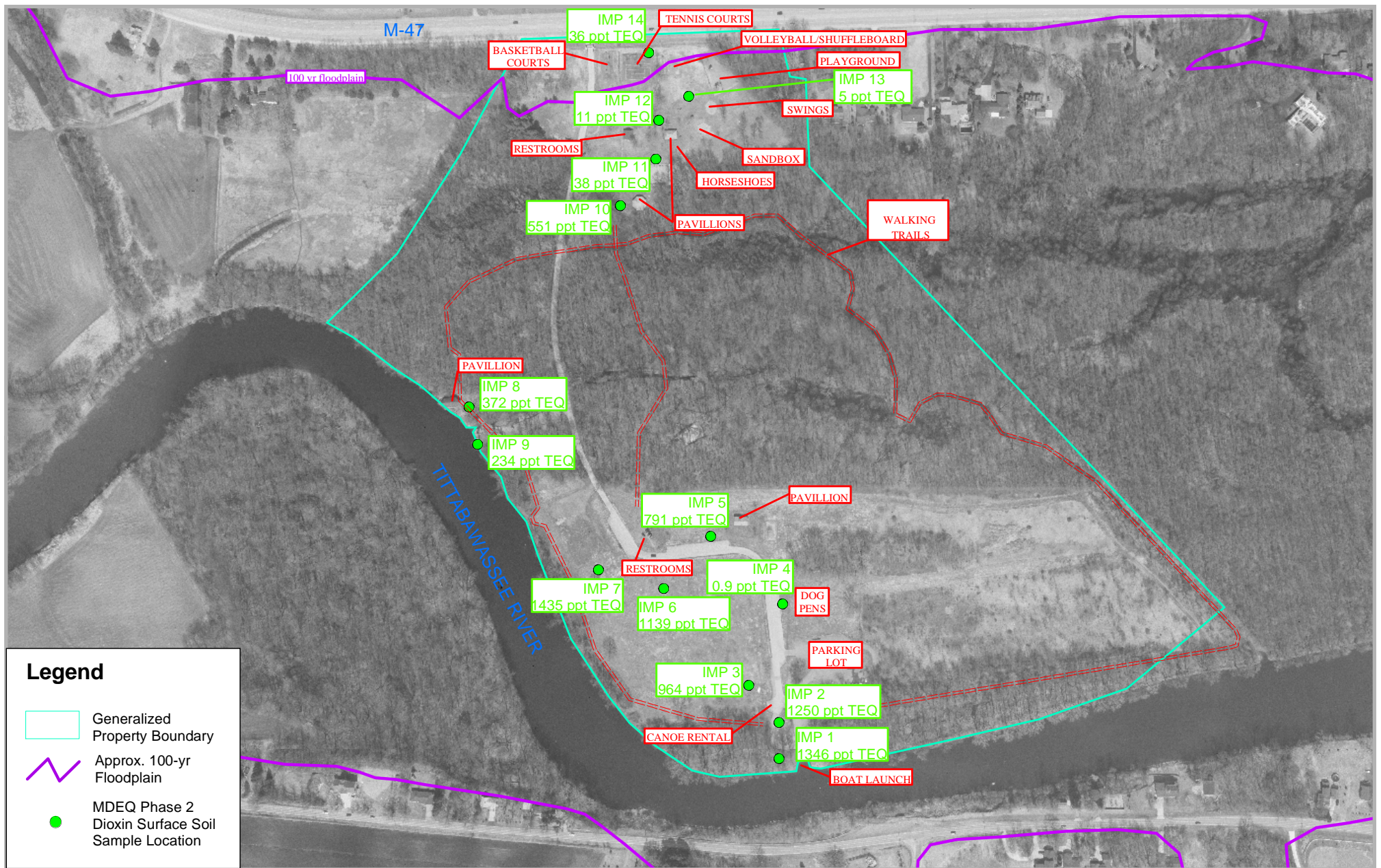


Figure 2

Features at Imerman Park
 Interim Response Activities Workplan: Imerman Park
 Dow Midland Offsite Corrective Action Program

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